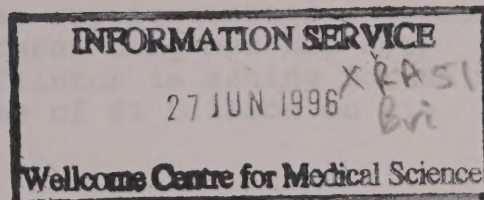
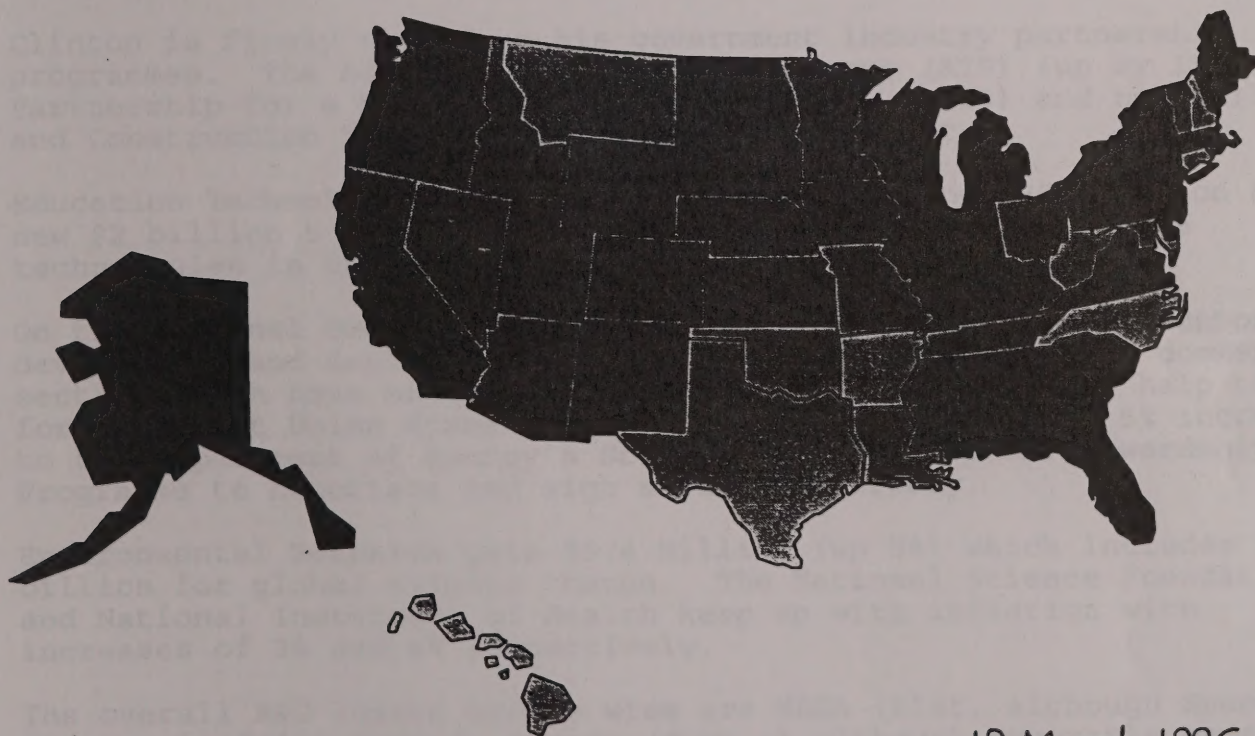


# SCIENCE AND TECHNOLOGY

U.S.A



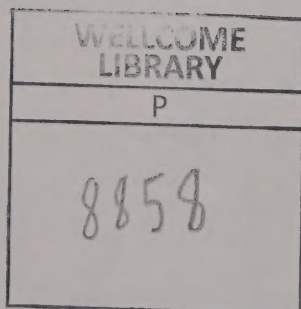
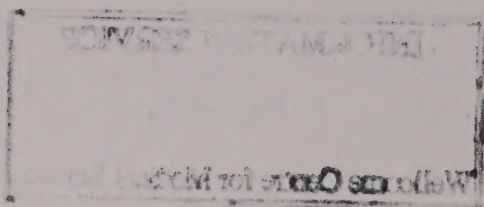
## SPECIAL BUDGET EDITION



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## US SCIENCE & TECHNOLOGY BUDGET FY '97

Jack Gibbons, Scientific Adviser to the President, gave a brief overview of the President's S&T Budget for 1997.

In this rather bizarre year when some agencies are still awaiting their '96 budgets, it should be noted that any percentage increases are based on 1996 figures which in many cases Congress has not agreed on. The overall picture is that Clinton is asking for an S&T budget of roughly \$73 billion, an increase of \$1 billion on his 1996 bid.

Those that did well in terms of R&D investments were Commerce (up 16%), EPA (up 15%) and Transportation Agency (up 9%). The Commerce figure is slightly misleading because the Administration are putting back money for applied research programmes like ATP which Congress has taken away. However that aside, applied research generally fares better than basic except in the Defence area. Overall University Research goes up by only 1% but within that, university merit-reviewed research shows an increase of 6%.

Clinton is firmly wedded to his government industry partnership programmes. The Advanced Technology Programme (ATP) (up by 15%), Partnership for a New Generation of Vehicles (up 5%) and new Building and Construction Technologies receive a 20% boost.

Education Technologies get a 9% increase including \$250 million for a new \$2 billion 5 year programme aimed at putting cutting-edge technologies in US schools.

On the National Security side there are small increases to support development and deployment of technologies produced in the commercial section which have military application. \$327 million to help the former Soviet Union dismantle cold war-era weapons and a 5% increase to the Department of Energy's Science-based Stockpile-Stewardship Programme to negotiate and sign a test ban treaty.

Environmental Research gets \$5.4 billion (up 5%) which includes \$1.9 billion for global climate change. The National Science Foundation and National Institutes of Health keep up with inflation with increases of 3% and 4% respectively.

The overall R&D losers agency wise are NASA (flat, although Space Station is fully funded, Energy (down 6% although renewable energy and energy efficiency is up by 31%), Interior (down 6%). Defence is flat but that's no surprise.

Summing up, S&T has done reasonably well as the administration moves towards a balanced budget. However even Gibbons concedes the real cuts will need to be made around the Millennium. What is certain is that Clinton is placing his trust and money in "Applied Basic Research/Industry programmes" which he thinks will create new jobs and new industries. And it is this message which he will present to the voters. See next item for a full breakdown of the figures.





# SELECTED SCIENCE AND TECHNOLOGY HIGHLIGHTS

(Budget authority, dollar amounts in millions)

	1993 Actual	1995 Actual	1996 Estimate <sup>1</sup>	1997 Proposed	Dollar Change: 1996 to 1997	Percent Change: 1996 to 1997
<b>National Science Foundation</b> .....	2,734	3,229	3,220	3,325	+105	+3%
<b>National Institutes of Health</b> .....	10,325	11,240	11,939	12,406	+467	+4%
<b>Environmental Protection Agency:</b>						
Environmental technology initiative .....		72	72	72	+	+
Science to achieve results .....		48	95	115	+20	+21%
<b>National Aeronautics and Space Administration:</b>						
International space station .....	2,262	2,113	2,144	2,149	+5	+
Mission to Planet Earth .....	917	1,344	1,289	1,402	+113	+9%
New millennium initiative .....	67	436	569	549	-20	-4%
Reusable launch vehicle technology program .....	0	129	159	266	+107	+67%
Aeronautics initiative .....	129	347	415	442	+27	+7%
<b>Department of Energy:</b>						
Stockpile stewardship .....	1,799	1,520	1,567	1,648	+81	+5%
Science users facilities initiative .....			100	100	+	+
Energy efficiency and pollution preventions R&D .....	350	447	417	548	+131	+31%
Renewable energy R&D .....	257	363	275	363	+88	+32%
Fusion energy science program .....	340	361	244	264	+20	+8%
<b>Department of Commerce:</b>						
NIST—Advanced technology program .....	68	341	300	345	+45	+15%
NIST—Manufacturing extension partners .....	18	74	100	105	+5	+5%
NIST—Intramural research .....	193	247	259	271	+12	+5%
NOAA—Weather service modernization .....	474	576	604	742	+138	+23%
NTIA—National information infrastructure .....		42	54	59	+5	+9%
<b>Department of Defense dual use application program</b> .....				250	+250	+
<b>USDA national research initiative</b> .....	98	101	97	130	+33	+34%
<b>Department of Transportation intelligent transportation system</b> .....	155	217	208	337	+129	+62%
<b>National Science and Technology Council initiatives:</b>						
<b>High performance computing and communications:<sup>2</sup></b>						
Defense .....	298	375	315	337	+22	+7%
Health and Human Services .....	47	68	81	87	+6	+7%
National Aeronautics and Space Administration .....	82	131	116	104	-12	-10%
Energy .....	100	119	121	125	+4	+3%
National Science Foundation .....	233	297	291	280	-11	-4%
Commerce .....	12	30	31	34	+3	+10%
Environmental Protection Agency .....		12	12	6	-6	-48%
Transportation .....		24	23	43	+20	+87%
Education .....		16	12	18	+6	+50%
Veterans .....		24	21	16	-5	-24%
<b>Subtotal</b> .....	772	1,096	1,023	1,050	+28	+3%
<b>U.S. global change research program:<sup>3</sup></b>						
Health and Human Services .....	1	4	4	4	+	+
National Aeronautics and Space Administration .....	917	1,308	1,250	1,375	+125	+10%
Energy .....	118	119	111	112	+2	+1%
National Science Foundation .....	124	169	163	170	+7	+4%
Agriculture .....	55	60	56	59	+3	+5%
Commerce .....	66	57	60	69	+9	+15%
Interior .....	38	30	29	29	+	+
Transportation .....		6	6	7	+1	+17%
Environmental Protection Agency .....		23	25	19	-6	-24%
Smithsonian .....		7	7	7	+	+
Tennessee Valley Authority .....		2	1	1	+	+
<b>Subtotal</b> .....	1,319	1,785	1,712	1,852	+141	+8%
<b>Environment and natural resources</b> .....		5,365	5,186	5,448	+262	+5%
<b>Partnership for a new generation of vehicles</b> .....		223	241	288	+47	+20%
<b>Construction and building</b> .....		168	162	194	+32	+20%
<b>Educational technology</b> .....		464	397	434	+37	+9%

\* Less than \$500 thousand or 0.5 percent.

<sup>1</sup> Includes Administration's proposed adjustments to 1996 continuing resolution levels.

<sup>2</sup> Listing by agency required by law.

<sup>3</sup> Listing by agency required by law, subset of Environment and Natural Resources.





# RESEARCH AND DEVELOPMENT INVESTMENTS

(Budget authority, dollar amounts in millions)

	1993 Actual	1995 Actual	1996 Estimate <sup>1</sup>	1997 Proposed	Dollar Change: 1996 to 1997	Percent Change: 1996 to 1997
<b>By Agency:</b>						
Defense .....	38,898	35,350	35,428	35,523	+95	+*%
Health and Human Services .....	10,472	11,519	12,118	12,621	+503	+4%
National Aeronautics and Space Administration .....	8,873	9,390	9,334	9,359	+25	+*%
Energy .....	6,896	6,481	6,689	6,269	-420	-6%
National Science Foundation .....	2,012	2,431	2,430	2,516	+86	+4%
Agriculture .....	1,467	1,542	1,479	1,499	+20	+1%
Commerce .....	793	1,164	1,086	1,260	+174	+16%
Interior .....	649	668	622	582	-40	-6%
Transportation .....	613	667	622	679	+57	+9%
EPA .....	511	554	528	585	+77	+15%
Other .....	1,308	1,315	1,114	2,178	+652	+57%
<b>Total .....</b>	<b>72,492</b>	<b>71,081</b>	<b>71,450</b>	<b>72,679</b>	<b>+1,229</b>	<b>+2%</b>
<b>By R&amp;D Theme:</b>						
Basic research .....	13,362	13,805	14,059	14,327	+268	+2%
Applied research .....	13,608	14,273	14,250	14,872	+622	+4%
Development .....	42,795	40,806	40,909	40,711	-198	+%
Equipment .....	.....	1,057	1,030	1,026	-4	+%
Facilities .....	2,727	1,140	1,201	1,742	+541	+45%
<b>Total .....</b>	<b>72,492</b>	<b>71,081</b>	<b>71,450</b>	<b>72,679</b>	<b>+1,229</b>	<b>+2%</b>
<b>By Civilian Theme:</b>						
Basic research .....	11,951	12,629	12,940	13,181	+241	+2%
Applied research .....	9,130	10,566	10,560	11,135	+575	+5%
Development .....	7,269	8,488	8,297	8,096	-201	-2%
Equipment .....	.....	599	554	546	-8	-1%
Facilities .....	1,979	975	996	1,446	+450	+45%
<b>Subtotal .....</b>	<b>30,329</b>	<b>33,257</b>	<b>33,347</b>	<b>34,404</b>	<b>+1,057</b>	<b>+3%</b>
<b>By Defense Theme:</b>						
Basic research .....	1,411	1,176	1,119	1,156	+37	+3%
Applied research .....	4,478	3,707	3,691	3,727	+36	+1%
Development .....	35,526	32,316	32,612	32,615	+3	+*%
Equipment .....	.....	458	476	481	+5	+1%
Facilities .....	748	167	205	296	+91	+44%
<b>Subtotal .....</b>	<b>42,163</b>	<b>37,824</b>	<b>38,103</b>	<b>38,275</b>	<b>+172</b>	<b>+*%</b>
<b>By R&amp;D Share:</b>						
Defense .....	42,163	37,824	38,103	38,275	+172	+*%
Civilian .....	30,329	33,257	33,347	34,404	+1,057	+3%
<b>Total .....</b>	<b>72,492</b>	<b>71,081</b>	<b>71,450</b>	<b>72,679</b>	<b>+1,229</b>	<b>+2%</b>
Percent civilian .....	42%	47%	47%	47%	NA	NA
R&D support to universities .....	11,674	12,445	12,573	12,728	+155	+1%
Merit (peer) reviewed R&D programs .....	.....	21,895	21,160	22,406	+1,246	+6%

NA = Not applicable.

\* Less than \$500 thousand or 0.5 percent.

<sup>1</sup> Includes Administration's proposed adjustments to 1996 continuing resolution levels.

<sup>2</sup> Includes total funding for several projects as part of a Government-wide transition to upfront funding of fixed assets.





## NATIONAL SCIENCE FOUNDATION FY 97 BUDGET REQUESTS

Dr Neal Lane, Director of the National Science Foundation announced that President Clinton's 97 budget request for the NSF is \$3.3 billion. This is an increase of 4.6% (\$145m) over the yet to be finalised NSF budget for FY97. Requested funding for research activities is up by 8.7% (\$2,472.m) giving increased allocations to NSF's six research directorates. A breakdown of the budget request follows:

	FY96 Estimate	FY97 Request	Change
Research & Related Activities	\$2,274	\$2,472	8.7%
Education & Human Resources	\$ 599	\$ 619	3.3%
Academic Research Infrastructure	\$ 100	\$ 0	-100.0
Major Research Equipment	\$ 70	\$ 95	35.7%
Salaries & Expenses	\$ 133	\$ 134	1.4%
Office of the Inspector General	\$ 4	\$ 5	4.5%
<b>Total, NSF</b>	<b>\$3,180M</b>	<b>\$3,325M</b>	<b>4.6%</b>

Dr Lane stated that of the total NSF budget request, which is just a step ahead of inflation, roughly 56% supports science and engineering research; 20% supports improvements in science education, engineering and math; 20% supports research facilities and 4% administration and management. Also contained within the budget is the recommendation for the elimination of the Academic Research Infrastructure Programme. This programme, which supports the upgrading and renovation of university laboratories will now fall to local or state Governments to fund.

Lane said NSF's FY97 budget request places emphasis in three major areas:-

- Developing a balanced structure that spans the frontiers of knowledge.
- Linking discovery and learning.
- Working in partnerships

